Course Syllabus

Programme of study:	Bachelor of Science in Mathematics	**Faculty:**	Science
Course Title:	Coding Theory	**Course Code:**	SCMA 360
Number of Credits (Lecture–Lab):	3(3–0)	**Prerequisite:**	–
Type of Course:	Specialised course	**Academic Year and Semester:**	2005, Second Semester

Course Objective

To introduce the students to the theory of coding, namely the basic principles behind it, as well as its main mathematical ingredients and uses. The students should be able to pursue doing a research in this field, had they a wish to do so in the future.

Course Description

In this course we learn about the theory of coding together with some basic principles of cryptography and cryptology. Firstly we study about error, entropy and bounds in coding, then about group, field and finite field. Next we look at various types of coding, namely linear, cyclic, Bose-Chaudhuri-Hocquenghem, Goppa, and maximum distance separable codes, and also if we have enough time Hadamard and quadratic residue codes. And then we mention briefly some basic ideas in cryptography in the light of coding.